Stäubli Robotics Controls software bring powerful and flexible solutions

VAL3 language

Advanced robotics environment to build high end and tailored applications.

Perfectly adapted for integrators and OEMs.

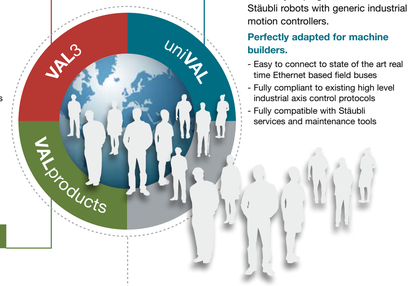
- Powerful robotics function sets addressed by a dedicated robotics language
- Reuse and capitalize knowledge thanks to flexible and modular approach
- Wide range of connection possibilities: DIO, AIO, field bus…
- Full robot and controller access from a single teach pendant interface

uniVAL drive

A « ready to plug » solution to drive Stäubli robots with generic industrial motion controllers.

Perfectly adapted for machine builders.

- Easy to connect to state of the art real time Ethernet based field buses
- Fully compliant to existing high level industrial axis control protocols
- Fully compatible with Stäubli services and maintenance tools



VALproducts solutions

Ready to use market solutions.

Perfectly adapted for end users.

- Short commissioning
- No programming knowledge required
- Modular and evolutive solutions
- Intuitive and interactive menus
- Standardized interface for all VALproducts

Stäubli Robotics Suite is a Windows-based software workbench for offline developments and online operations

Develop and test on your PC
The ergonomic and easy to use VAL3 Studio is the perfect environment to develop your VAL3 applications. The Cells Manager gives you the capability to work on multiple robot systems by creating virtual cells matching the real systems in terms of software version, options, system configuration (I/Os,…), and robot model. The Emulator (controller emulation) and 3D Studio (robot arm visualization) provide a full emulation of the robot system to fine tune and test your developments even before you receive your actual robot system.

Go from your PC to the robot system
When it comes to the point of using the real system, the Transfer Manager allows you to transfer back and forth all your programs and data in just a few clicks. The Online Debugger (embedded in the VAL3 Studio) then provides all the tools necessary for the final debugging and adjustment stages.

Remotely access the robot system
The Remote Access provides full access to the robot system from a remote location. You can control the system from your remote PC and visualize in real-time any operation performed on the teach pendant by the operator. For complete system backup, the Transfer Manager offers the capability to transfer the entire contents of the robot system to a remote PC, either manually or automatically as a scheduled task.

VAL3 STUDIO
Offline VAL3 editor, online debugger.

EMULATOR
Windows-based emulator of CS8 controller.

3D STUDIO
3D visualization of robot arm and trajectory data.

TRANSFER MANAGER
All-in-one transfer tool between robot system and development PC.

REMOTE ACCESS
Online diagnostics.

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International: priority to proximity

- ■ Stäubli Units
- ○ Partners

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STÄUBLI

ROBOTICS

STÄUBLI

Product range

Stäubli, the recognized world leader in the robotics market

CS8C HP controller

CS8C controller

CS8 controller range

MODEL	CS8C M	CS8C			CS8/CS8 EX	CS8C HP	CS8 HP
Dimensions (H x W x D) (mm)	500 x 200 x 258,5	331 x 445 x 455	481 x 445 x 455	1035 x 850 x 775	1000 x 600 x 715	1035 x 600 x 846	1200 x 900 x 500
Protection class	IP20	IP20 (IP54 optional)	IP20 (IP54 optional)	IP54	IP54	IP54	IP54
Storage capacity	64 MB RAM (min.)						
Backup	128 MB (min.) Flash disk and USB port						
System/Programming language	VAL3 (multitask interpreted language)						
Communication	RS232/422 serial link Modbus server - Ethernet						
Inputs/Outputs (I/O)	1 or 2 boards 16/16 digital I/O, optional				16/16 board and/or 32/32 digital I/O	1 or 2 boards 16/16 digital I/O, optional	16/16 board and/or 32/32 digital I/O
	Field bus (DeviceNet, Profibus, CANopen, ModBus)						
Weight (kg)	17	50	60	140	170	140	200
Stäubli robot arm	**TS**20	**TS**40, **TS**60, **TS**80, **TX**40, **TX**60 and **TX**90 series	**RX**160 series	**TX**250 paint	**RX**170 hsm (**CS8**), **RX**60 paint and **RX**90 paint series (**CS8** EX)	**TX**200 series	**RX**260 and **RX**270 series

SP1 MANUAL CONTROL UNIT: THE POWER OF STÄUBLI AT YOUR FINGERTIPS

This unique terminal combines a lightweight design (700 g), ergonomics (for left or right-handed user) and robustness to deliver advantages in all environments:

- built-in programming, maintenance and supervision,

- safety functions (3-position dead-man control, presence detection).

A unique range of robots

Standard arm range

	TS20	TS40	TS60	TS80	TX40	TX60	TX60L	TX90	TX90L	TX90XL	RX160	RX160L	TX200	TX200L	RX260	RX260L	RX270	TX250 paint
	LOW PAYLOAD 4 axis (1 to 10 kg)				**LOW PAYLOAD 6 axis** (1 to 10 kg)			**MEDIUM PAYLOAD 6 axis** (10 to 80 kg)					**HEAVY PAYLOAD 6 axis** (over 80 kg)					**PAINTING**
MODEL	TS20	TS40	TS60	TS80	TX40	TX60	TX60L	TX90	TX90L	TX90XL	RX160	RX160L	TX200	TX200L	RX260	RX260L	RX270	TX250 paint
Maximum payload (1) (kg)	1	8	8	8	2	9	5	20	15	12	34	28	130 (2)	80 (2)	150	130	250	10
Nominal payload (kg)	0,5	2	2	2	1,7	3,5	2	7	6	5	20	14	100 (2)	60 (2)	130	130	220	5
Reach at wrist (mm)	220	400	600	800	515	670	920	1000	1200	1450	1710	2010	2194	2594	2831	3210	2967	2547,5
Number of axes	4	4	4	4	6	6	6	6	6	6	6	6	6	6	6	6	6	6
Repeatability to ISO 9283 (mm)	±0,01	±0,01	±0,01	±0,01	±0,02	±0,02	±0,03	±0,03	±0,035	±0,04	±0,05	±0,05	±0,06	±0,1	±0,07	±0,07	±0,09	(4)
Protection class (*wrist)	IP10	IP54	IP54	IP54	IP65 (*67)	IP65 (*67)	IP65 (*67)	IP65 (*67)	IP65 (*67)	IP65 (*67)	IP65 (*67)	IP65 (*67)	IP65 (*67)	IP65 (*67)	IP65	IP65	IP65	IP65
Working range																		
Axis 1	±133°	±105°	±125 / ±140° (1)	±140°	±180°	±180°	±180°	±180°	±180°	±180°	±160°	±160°	±180°	±180°	±180°	±180°	±180°	±160°
Axis 2	±131°	±143°	±150°	±155°	±125°	±127,5°	±127,5°	+147,5°/ -130°	+147,5°/ -130°	+147,5°/ -130°	±137,5°	±137,5°	±120°	±120°	+75°/ -55°	+75°/ -55°	+75°/ -60°	±137,5°
Axis 3	100 mm	200 or 400 mm (option)	200 or 400 mm (option)	200 or 400 mm (option)	±138°	±142,5°	±152,5°	±145°	±145°	±145°	±150°	±150°	+145°/ -140°	+145°/ -140°	+110°/ -170°	+110°/ -170°	+110°/ -170°	±150°
Axis 4	±250°	±500° (3)	±500° (3)	±500° (3)	±270°	±270°	±270°	±270°	±270°	±270°	±270°	±270°	±270°	±270°	±280°	±280°	±2700°	±720°
Axis 5	-	-	-	-	+133,5°/ -120°	+132,5°/ -122,5°	+132,5°/ -122,5°	+140°/ -115°	+140°/ -115°	+140°/ -115°	+120°/ -105°	+120°/ -105°	±120°	±120°	±120°	±120°	±125°	±720°
Axis 6	-	-	-	-	±270° (3)	±270° (3)	±270° (3)	±270° (3)	±270° (3)	±270° (3)	±270° (3)	±270° (3)	±270°(3)	±270° (3)	±2700°	±2700°	±2700°	±720°
Maximum speed																		
Axis 1	867°/s	650°/s	450°/s	450°/s	370°/s	435°/s	435°/s	400°/s	400°/s	400°/s	200°/s	200°/s	150°/s	150°/s	108°/s	108°/s	85°/s	140°/s
Axis 2	867°/s	725°/s	520°/s	520°/s	370°/s	410°/s	385°/s	400°/s	390°/s	350°/s	200°/s	200°/s	150°/s	150°/s	104°/s	104°/s	83°/s	125°/s
Axis 3	580 mm/s	2100 mm/s	2100 mm/s	2100 mm/s	550°/s	540°/s	500°/s	430°/s	420°/s	410°/s	255°/s	255°/s	150°/s	150°/s	110°/s	110°/s	90°/s	185°/s
Axis 4	2500°/s	2020°/s	2020°/s	2020°/s	900°/s	995°/s	995°/s	540°/s	540°/s	540°/s	315°/s	315°/s	260°/s	260°/s	190°/s	190°/s	150°/s	350°/s
Axis 5	-	-	-	-	900°/s	1065°/s	1065°/s	475°/s	475°/s	475°/s	390°/s	390°/s	260°/s	260°/s	190°/s	190°/s	135°/s	350°/s
Axis 6	-	-	-	-	1000°/s	1445°/s	1445°/s	760°/s	760°/s	760°/s	870°/s	870°/s	400°/s	400°/s	230°/s	230°/s	200°/s	450°/s
Arm weight (kg)	15	46	55	56	27	51	52	111	114	116	248	250	1000	1020	1900	1900	2000	250
Mounting positions	Floor		Floor/Wall		Floor/Wall/Ceiling						Floor/Ceiling		Floor/Ceiling			Floor		Floor/Ceiling
Robot controller	CS8C M	CS8C											CS8C HP			CS8 HP		CS8C
Market specific robots:																		
Paint								x	x	x	x	x						x
Plastics					x	x	x	x	x	x	x	x	x	x				
Cleanroom					x	x	x	x	x	x	x	x						
Supercleanroom					x	x	x	x	x	x								
Stericlean					x	x	x	x	x									
Humid Environment						x	x	x	x	x	x	x	x	x				

(1) Under special conditions, consult us. **(2)** For ceiling version, consult us. **(3)** Can be configured by software up to ±18000°. **(4)** Consult us.

Specialized robot arms to cover all requirements

Paint
This dedicated range of Paint robots from 0,6 to 2,5 m reach offers unique benefits:
- Ease of use by the painter (PaintiXen software),
- Savings in paint and solvents, lower environmental impact (high path accuracy),
- Paint equipments run inside the arm, reduced contamination (hollow wrist),
- Optimum integration (multiple attachment possibilities),
- Pending CE, FM and TIIS certifications.

Plastics
The line of 6-axis robots is made for the Plastics industry:
- Ease of use by operators (VALplast software),
- Built-in communications with IMM (pre-wired Euromap/ SPI interface),
- Cleanliness (ISO class 5) for use in clean environment,
- High throughput (high speed and precision),
- 6 degrees of freedom are ideal to handle secondary operations at the foot of the press.

Cleanroom/ Supercleanroom
The TX cleanroom (CR) and Supercleanroom (SCR) range have been developed to meet clean environment needs (semiconductor, pharma…):
- High cleanliness (ISO class 2/3 for SCR, and class 3/4 for CR versions),
- High productivity (high speed, reliability and dexterity),
- Straight lines slot loading/ unloading (high path precision),
- Optimized cell volume (small arm footprint, large work envelope).

Stericlean
TX stericlean robots are designed to meet the stringent requirements of VHP decontamination process:
- Fully hydrogen peroxide (H_2O_2) resistant,
- Replace an operator in isolator environment (glove box) due to their high dexterity and small footprint,
- High reliability proven by the leaders in life sciences and Cleanroom,
- System and user connections protected under the base of the robot.

Humid Environment
The range of TX 6-axis robots are ideally suited for applications in very humid environments (waterjet cutting, cleaning, food processing…):
- Resistant to liquids with pH between 4,5 and 8,5,
- Waterproof (enclosed arm structure reinforced by arm pressurization),
- Improved connection protection (interconnection cables located underneath the arm),
- Easy to clean (smooth shiny finish).

Machining
This unique 5 axis RX170 hsm (high speed machining) robot is designed for machining operations:
- Extremely rigid and precise (high speed spindle integrated into the arm),
- Dedicated VALhsm software (spindle management interface),
- All cables run inside the arm (electrical supply of spindle, cooling and micro-lubrication),
- Possibility to machine many materials (aluminum, stainless steel, composites, resins, wood, glass, brass, inconel, stone,…) with high precision.